E-RECORDS

OUR INNOVATION JOURNEY - A PAPERLESS OPERATION

SWARAN SIDHU - HEAD OF FLEET TECHNICAL MANAGEMENT

europe by easyJet

SOMETHING ABOUT US...

> WHAT WE DO:

We are low-cost European point-to-point short-haul airline.

> WHERE WE DO IT:

Intra-European short-haul network.

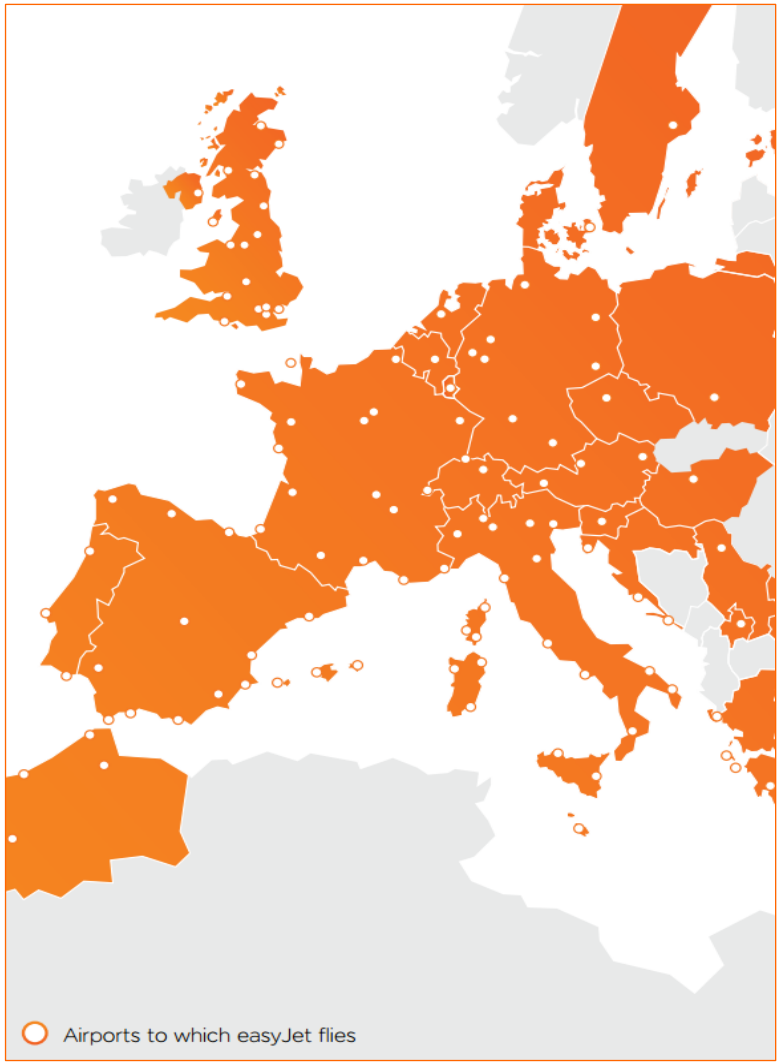
> OUR AMBITION:

Is to be Europe's preferred short-haul airline, delivering market leading returns.

> OUR CAUSE:

Seamlessly connecting Europe with the warmest welcome in the sky

317	90m+	1,000+	40
aircraft	passengers	routes	bases



SOMETHING ABOUT US...

> How many aircraft does EZY operate = 317 (UK 178 / AU 113 / CH 26)

> Average number of daily flights that EZY operate in the summer season = Between 1800-1900, highest number of sectors was 1942 on 15th September

> How many passengers do we carry each day = Up to 330,000

> Significant challenges to the operation
- Weather
- ATC
- Strikes
- Aircraft FOD Damage/Ground Damage
- MRO/OEM performance

OUR AIRCRAFT

> 317 AIRCRAFT... and growing!

> Average age: 7 years

> 8,400,000+ hours flown with Airbus

> 5,250,000+ flights flown with Airbus

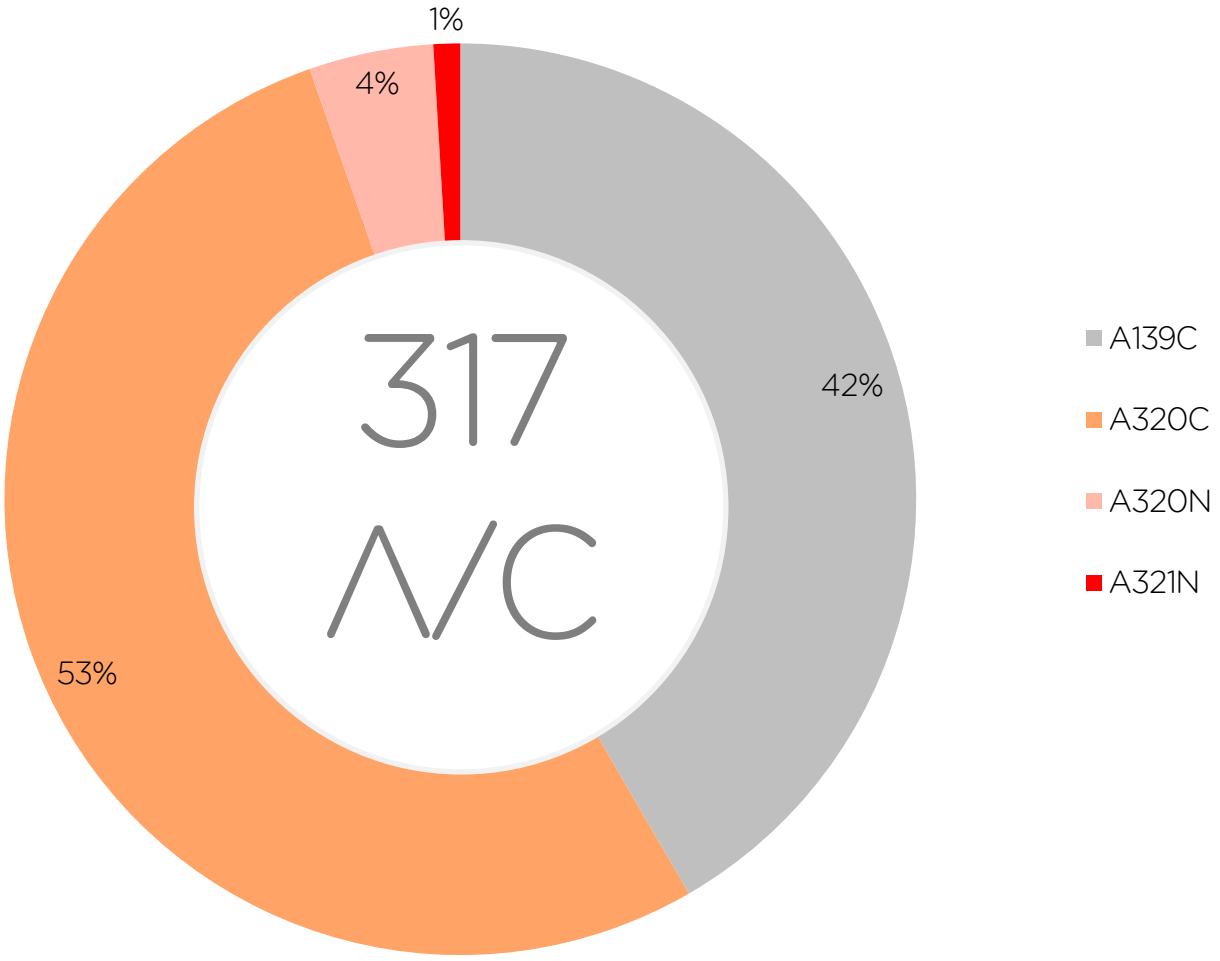
> Entry 2018

> Entry 2017

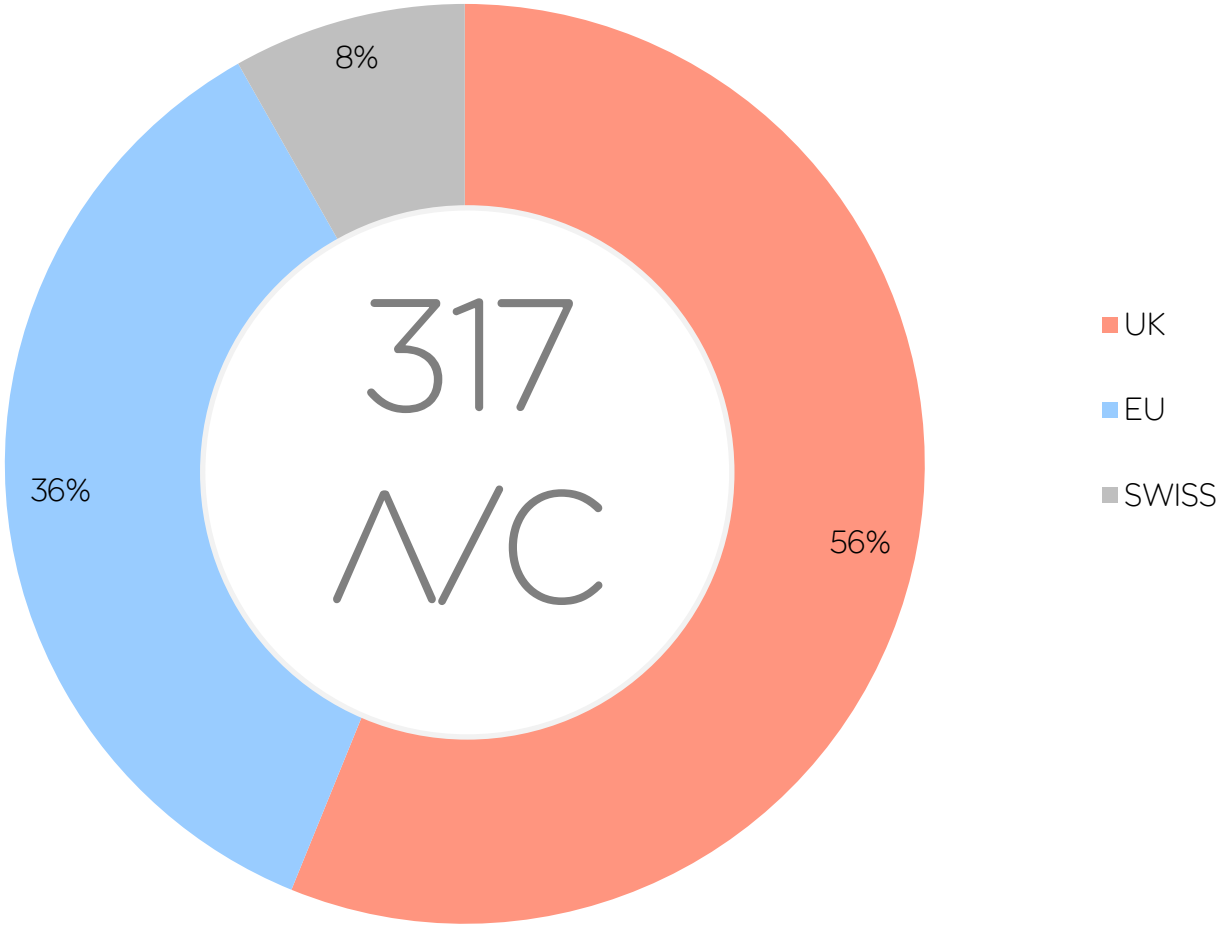
> Entry 2009

> Entry 2003

OUR AIRCRAFT

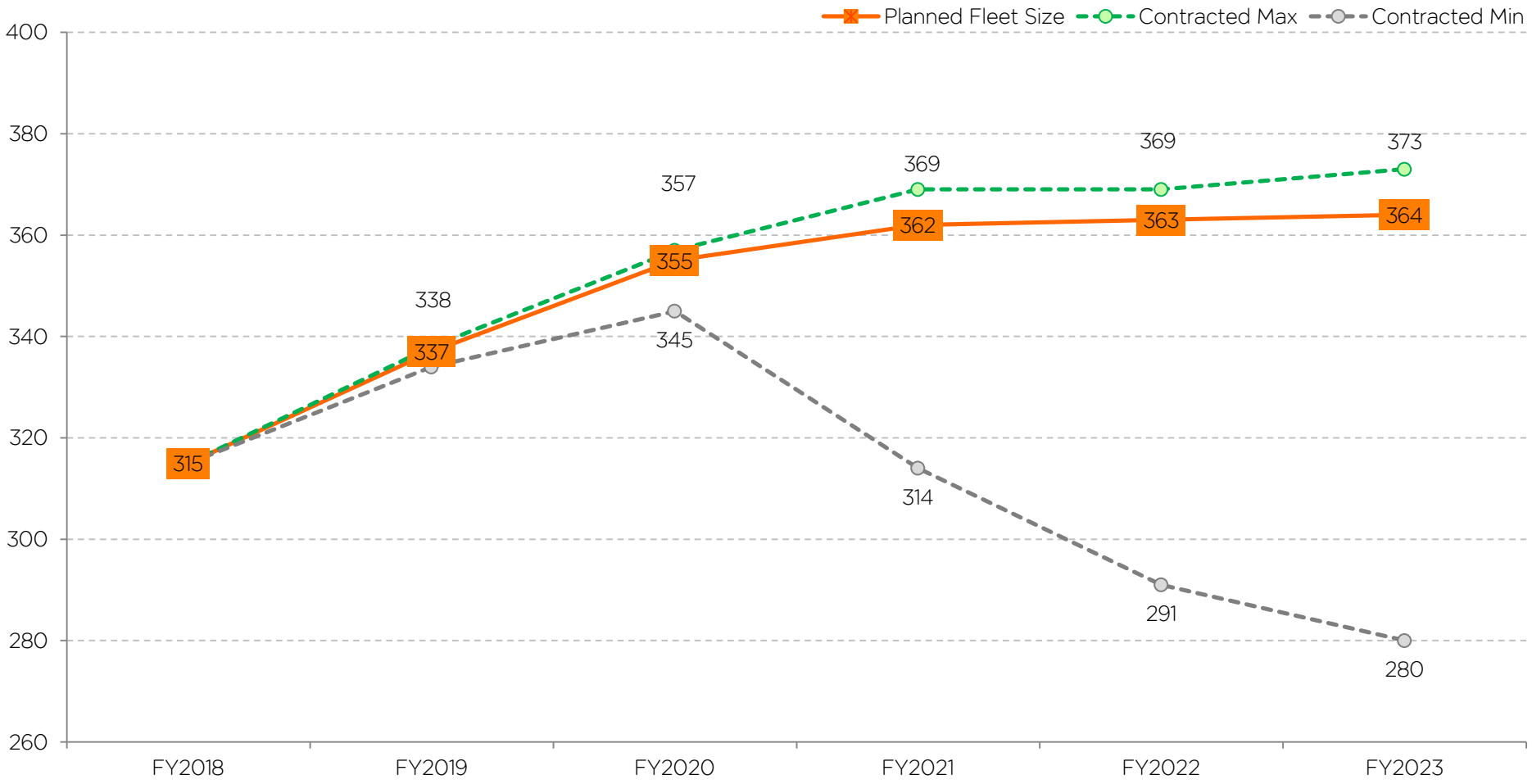


OUR AIRCRAFT

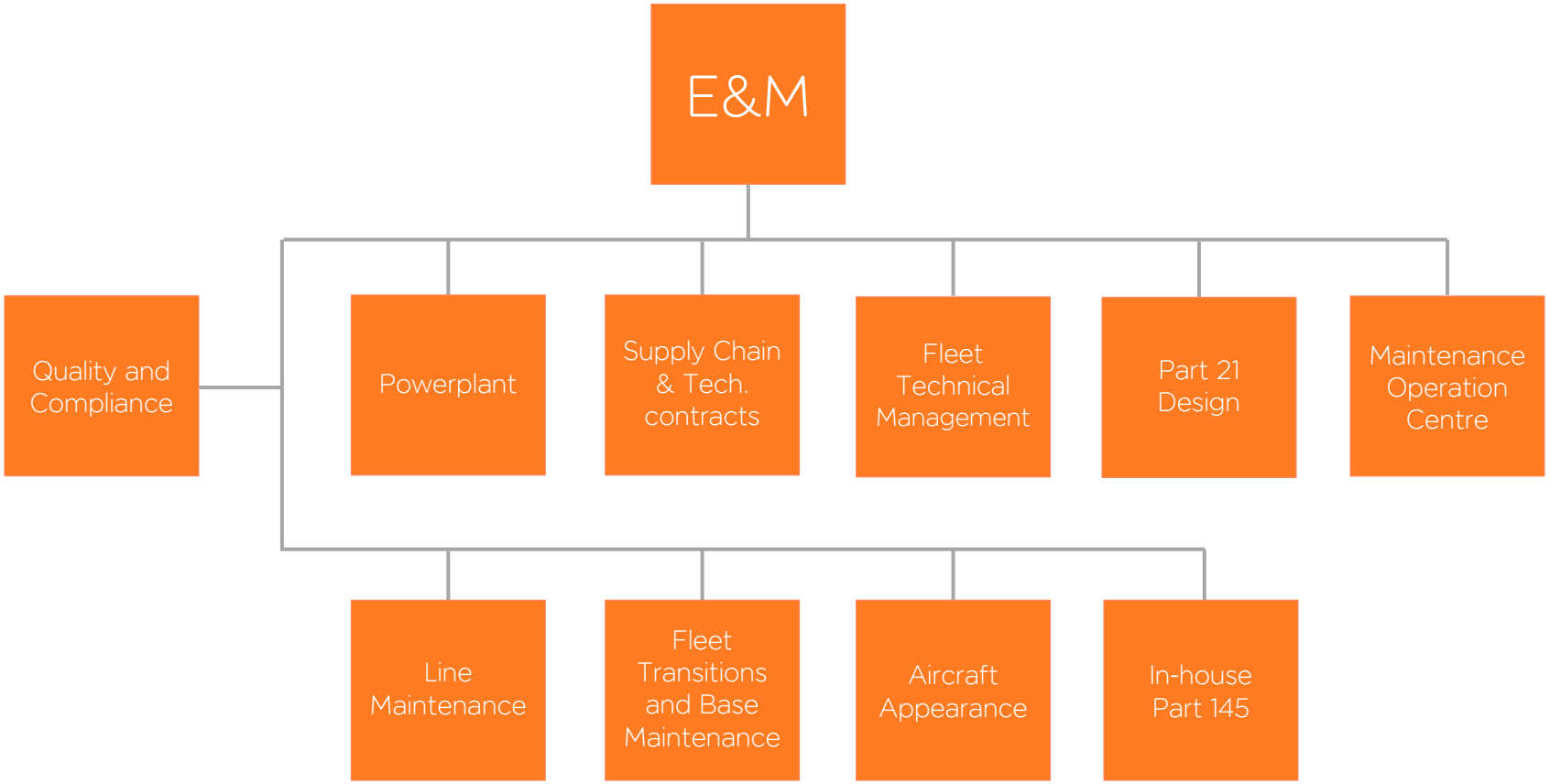


FLEXIBILITY IN GROWTH

> Flexible fleet arrangements to respond appropriately to market conditions



ENGINEERING & MAINTENANCE
DEPARTMENTAL BREAKDOWN

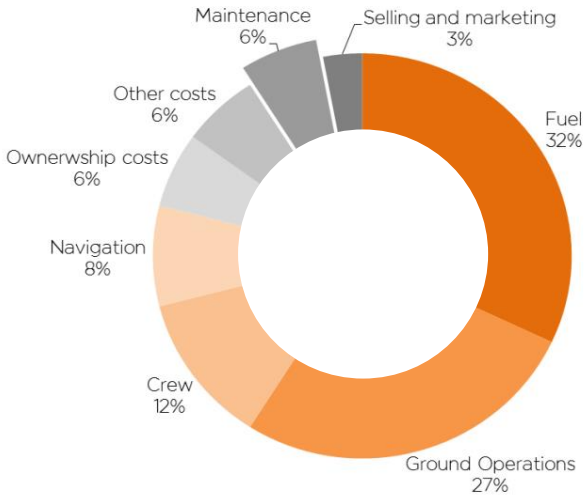


ENGINEERING & MAINTENANCE
OVERVIEW

> Support 317 Airbus A320 family aircraft at present.
  - Single type operator
  - Largest operator of A319 in the world, second largest A320 family
  - Just received our first A321N in July 2018

> Employ 255 staff.
  - 55% Part M and Part 21
  - 45% Part 145

> Maintenance spend of £268 million in FY17 (£3.09 per seat flown).

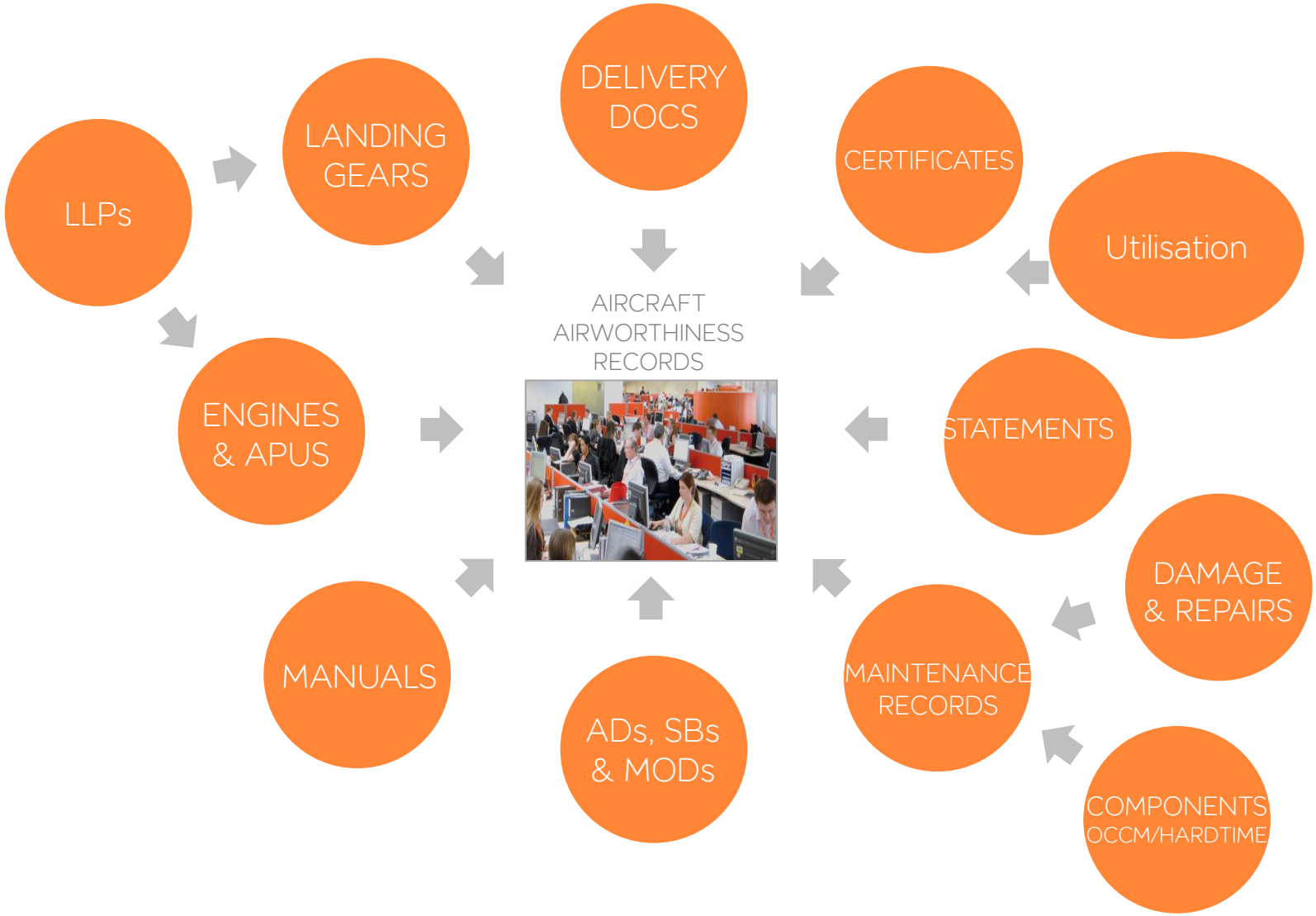


WHY ARE RECORDS SO IMPORTANT?

1. Safety 
2. Reliability 
3. Asset value 
4. Efficient transfers 

RECORDS SUPPLY CHAIN

E-RECORDS
PAPERLESS OPERATION



I COULD FIND THIS PAPER FOR YOU...

STILL PAPER BUT ORGANISED

EASYJET'S PAPERLESS VISION

Easyjet's vision was to become fully digital in managing its aircraft technical records that were capable of being intelligently indexed and providing the capability to prepare end of lease exit ready aircraft documentation.

We already had in operation a digital solution that allowed an indexed filing system. However that was not sufficiently efficient to remove the reliance on paper. To reach that goal we needed to adopt an innovative technology that would give us these efficiencies. Hence we designed a solution in collaboration with our current maintenance software providers and introduced e-sign as part of a major maintenance information and control system upgrade.

WHY THE NEED

NEGATING HUMAN ERROR

Removing error risk in terms of accountability of records verification

SAFETY

Enhancing safety by having mandatory sign off steps

HEADCOUNT FLAT

Create an efficient Airworthiness Records organisation

COST SAVINGS

Negating Shipping and Storage of paper documents

EFFICIENCY

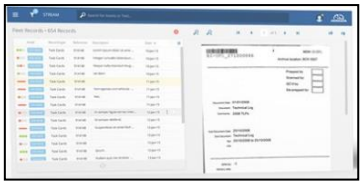
More efficient maintenance checks by removing the requirement to print and sign

TRANSPARENCY

Remote access for Lessors and authorities

WHAT DID WE DO

Progressive build up to paperless by first creating online TLP verification
Utilisation feed through ACARS/AIMS interface
Removed hardcopy log books Airframe/Engine/APU and adopted AMOS as the alternative
Scanned all historical records to STREAM and created an online re-delivery bible to coordinate EOL exits
Incorporating aircraft damage reporting directly into AMOS negating the need of paper forms
Undertook a major upgrade of our maintenance software system



SWISS AviationSoftware

AIMS AIRLINE SOFTWARE

Introduced by designing in collaboration with
our maintenance software provider an e-sign solution

HOW DID WE ACHIEVE IT

Updated from version 9.8 to 10.9
(Swiss / IT / KSU)

Communicated and worked closely with our Competent Authority to approve our e-sign solution(CAA)

Worked with our technical records digital storage supplier to ensure effective receipt and display of e-sign records(STREAM)

Prepared our Lessor community to accept digital records transfer as well as internal departments involvement
(Lessors / EZY SME / HOD)

PRE E-SIGN

E-RECORDS
PAPERLESS OPERATION

> We verify 100% of our maintenance records on a daily basis. Scan and transfer it to long term storage.

> With a fleet of 300 plus aircraft that's a huge amount of paper and data to process.

ONE OF THE LATEST COUNT

> Daily Verification:

+ 950 Tech Log Pages per day.
+ 370 Daily Work-Packages.

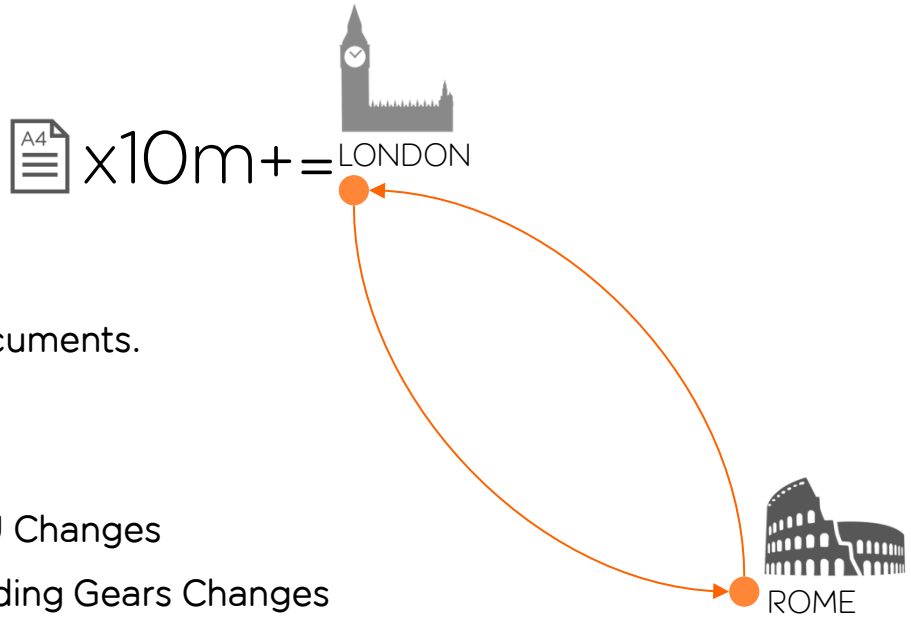
> Archive Storage:

+ 4,592 boxes / approaching 10 million documents.
+ 1.2TB scanned Data

> Managed by easyJet since 2010:

+ Current Fleet 317+
+ 200 Aircraft Deliveries
+ 562 Engine Changes

475+ APU Changes
462+ Landing Gears Changes
46+ On-Time Re-deliveries



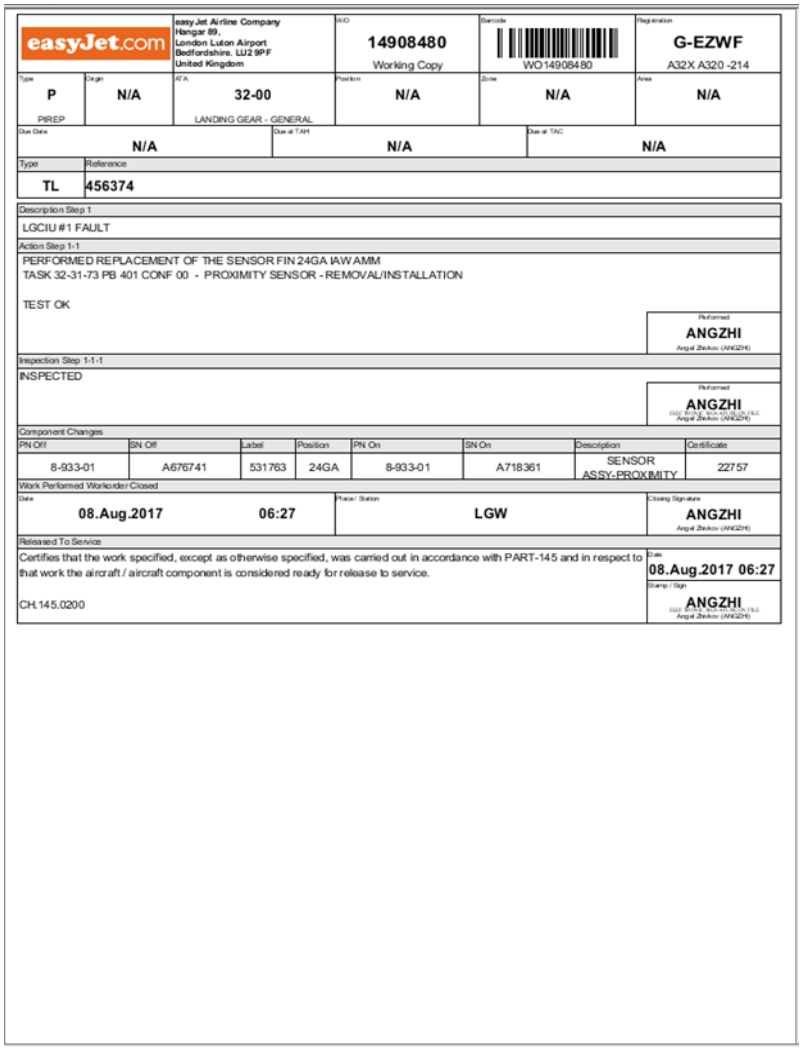
POST E-SIGN

E-sign capability at all MRO network stations

80% reduction in paper

Reduction in Logistics and Storage

Enhanced Safety during maintenance



easyJet.com

easy Jet Airline Company
Hangar 89 ,
London Luton Airport
Bedfordshire. LU2 9PF
United Kingdom

W/O 14908480 Working Copy

Barcode WO14908480

Registration G-EZWF A32X A320 -214

Type	Dsgn	ATA	Position	Zone	Area
P PREP	N/A	32-00 LANDING GEAR - GENERAL	N/A	N/A	N/A

Due Date	Due at TAH	Due at TAC
N/A	N/A	N/A

Type	Reference
TL	456374

Description Step 1

LGCIU #1 FAULT

Action Step 1-1

PERFORMED REPLACEMENT OF THE SENSOR FIN 24GA IAW AMM
TASK 32-31-73 PB 401 CONF 00 - PROXIMITY SENSOR - REMOVAL/INSTALLATION

TEST OK

Performed ANGZHI

Inspection Step 1-1-1

INSPECTED

Performed ANGZHI

Component Changes

PN Off	SN Off	Label	Position	PN On	SN On	Description	Certificate
8-933-01	A676741	531763	24GA	8-933-01	A718361	SENSOR ASSY-PROXIMITY	22757

Work Performed Workorder Closed

Date		Place / Station	Closing Signature
08.Aug.2017	06:27	LGW	ANGZHI

Released To Service

Certifies that the work specified, except as otherwise specified, was carried out in accordance with PART-145 and in respect to that work the aircraft / aircraft component is considered ready for release to service.

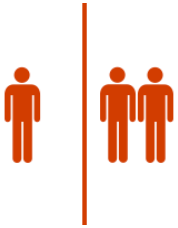
Date 08.Aug.2017 06:27

CH.145.0200

Stamp / Sign ANGZHI

LESSONS LEARNT

Project Management Consistency
Project scope consistency



Lack of e-sign comparable solution for benchmarking to understand what success looks like

Competent authority buy in throughout the process
Key Super Users commitment and availability
Governance/Structure to be agreed at senior level to ensure proper funding/resource

Civil Aviation Authority

AERDATA

SWISS AviationSoftware

Identifying the relevant Stakeholder group to be involved in Steering Meetings e.g. Swiss AS/Cross Consence/Aer Data

WHAT WENT WELL?

	Key Learnings
 Scope and objectives	• The business and project team were agreed and worked together on the vision to deliver the system upgrade and eSign functionality. • The financial and contractual impact of the upgrade not occurring was communicated clearly to the business from IT.
 Business value and economics	• Reduction in contract staff for technical records verification by reducing paperwork management & storage. • Enabling the start of a paperless maintenance vision. • Avoiding extended system support costs. • Keeping headcount flat.
 Governance and organisation	• Regular weekly meetings in the last 12 weeks before upgrade. There were items that had been missed and this regular drumbeat helped keep on top of any issues and actions if they appeared. • The engineering management team were aligned in the goal to upgrade and understood the risks of not, whilst also understanding the open risks at each phase.
 Solution and deliverables	• The AMOS system has been very stable since release with no outages or slow downs reported since go-live • eSign is working well and has reduced paperwork processing by easyJet enormously circa 80%.
 Planning and execution	• During the transition period, having a dedicated phone number and staff in easyJet MOC worked very well. This consisted of AMOS Admin and business KSUs from Line Maintenance, Component Engineering, Tech Records and MOC Front Desk. This did however take out the 2 key admin to night shifts which caused fatigue and left project team without expertise during day shifts. • Tech Records overnight support for MOC if any issues occurred during the night with paperwork. • Clear cutover plan with expected durations and decision points with regular communication working very well through the night. No concerns from business as they had regular updates on schedule.

WHAT WE CAN DO DIFFERENT NEXT TIME?

1. Avoid combining AMOS system upgrade with e-sign
2. Allow for sufficient training/familiarisation of e-sign
3. Extend the testing phase of e-signed document migration from maintenance system to document storage system
4. End to end process mapping to understand full effects of removing paper i.e manual reporting sheets such as SBs
5. More realistic go-live dates
6. Part 145 capabilities to manage electronic cards

WHY ARE WE NOT TOTALLY PAPERLESS?

- E-Tech Log still to be adopted but in evaluation phase…….
- Lack of common interfaces between all the different stakeholders involved.
- OEMs and MROs have not embraced a Paperless concept fully
- Also, because we are driven largely by the use of paper during the cycle of the aircraft. From delivery of a new aircraft we receive it, transfer data from it, print it, sign it, scan it, file it, store it and then return it.

CRADLE TO GRAVE LIFE CYCLE

E-RECORDS
PAPERLESS OPERATION

Build | Deliver to | Airline#1 | Re-deliver | Airline>1 | Re-deliver | Dispose

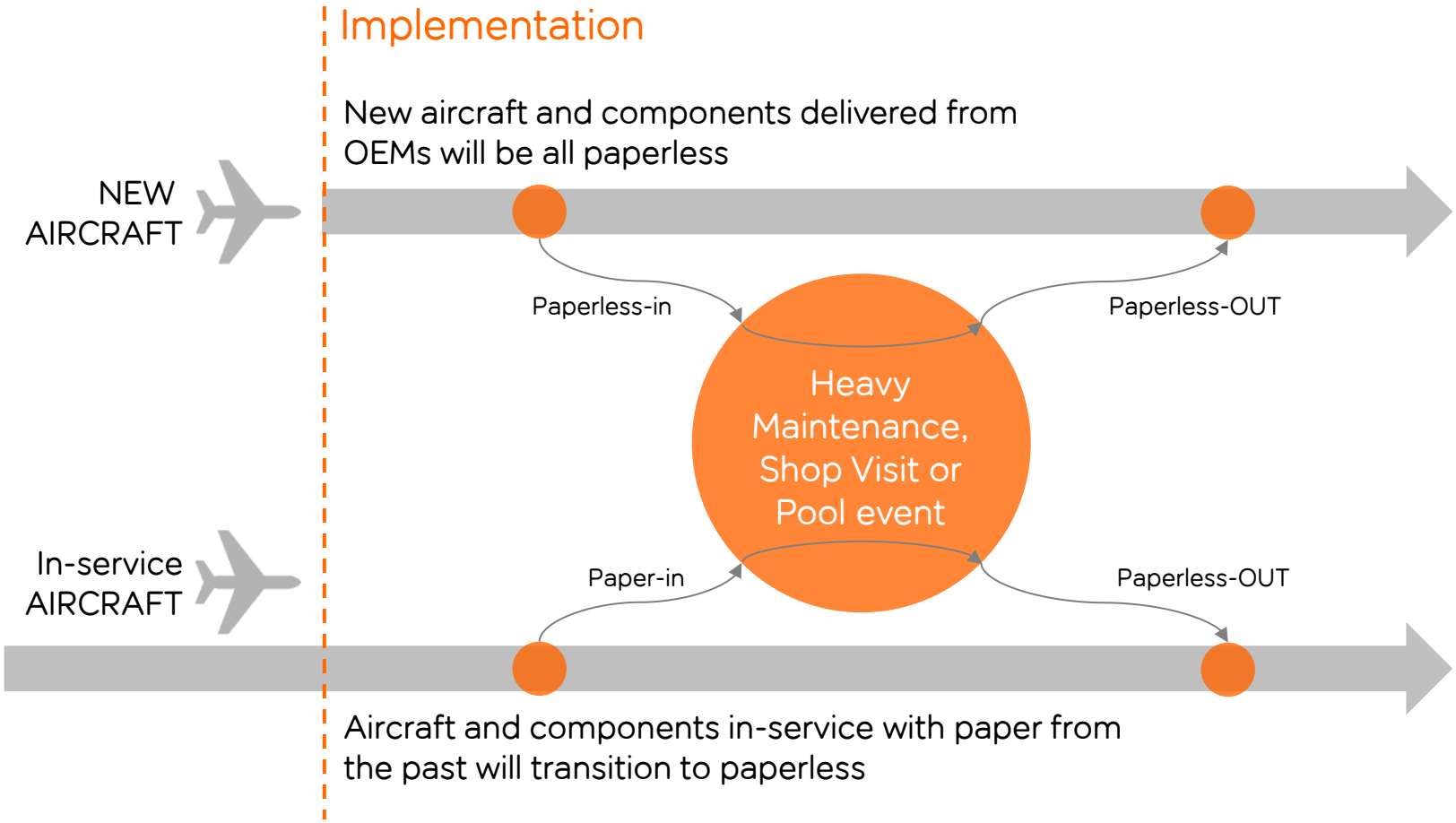
Airlines 1, 2, 3...control:
Airworthiness, configuration, compliance, AMP, Data, Records, Tech Pubs, End of Lease needs & Maintenance Execution by MROs

MROs - Maintenance Events:
(airframe, engines, components)
Task card records, certification records, parts records.

Lessors & Airlines require for delivery & re-delivery:
Aircraft record logs, aircraft inspection reports, technical publications, Certificate of Airworthiness, AD status, LLP status, AMRs, Technical Logs, Weight & Balance status, Engine status, Certificate of Export, etc...

OEMs
Build, provide initial delivery and through-life OEM technical & operational support.

PAPERLESS STATE PROCESS



EASYJET CHALLENGES

E-RECORDS
PAPERLESS OPERATION

1. Standardise aircraft delivery data

2. Automated re-delivery & publication

3. E-Tech Log

4. Working with Industry Working Groups

INDUSTRY CHALLENGES

Regulatory

- Acceptance of digital and electronically generated documents replacing paper
- Accept e-sign the same as dfps.
- NAA harmonisation on paperless records

Operators/MROs/OEMs/IATA

- Adoption of common standards for data portability between airlines, MROs and supplier organisations.
- Standards flexible enough to adapt to future evolution of technology solutions
- Universal adoption of standards for proprietary systems and communications (data migration) between proprietary systems.
- Agreement on industry goals and associated timing.
- Quantifying the cost/benefit and timing of moving to paperless.
- And most importantly… keep costs under control.




IATA

Technology

- Proprietary technology solutions bring intellectual property hurdles that need to be considered.
- Harmonise technology solutions that allow practical system access and data portability

Lessors

- Lessors need to standardise their requirements for record management and promote paperless
- Standardise lease agreements related to paperless records

RECORDS EVOLUTION VS TECHNOLOGY PACE

E-RECORDS
Paperless operation

TELEVISION

RADIO

PHONE

INTERNET

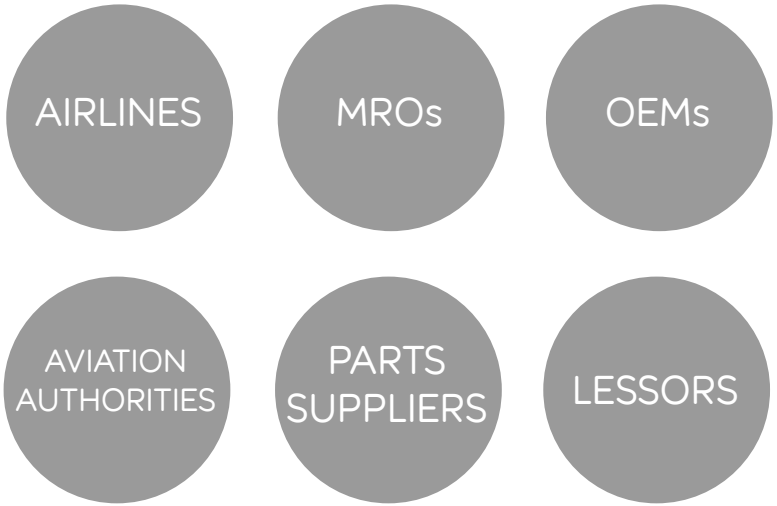
AIRCRAFT RECORDS EVOLUTION

1960 1970 1980 1990 2000 2010 2017 FUTURE

IT IS TIME FOR CHANGE

easyJet along with a number of the STAKEHOLDERS are innovating towards a more automated and efficient way of working in the life cycle of our aircraft

STAKEHOLDERS

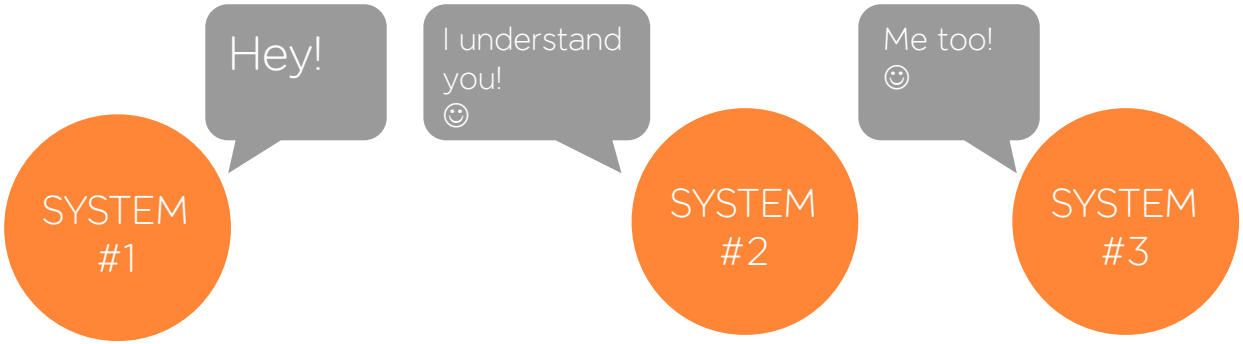


THIS IS WHAT WE COULD ACHIEVE TOGETHER

1. Quicker to process.
2. Easier to search.
3. Reduced storage.
4. Safer records, safer aircraft.
5. Helps to maintain value of assets.
6. More efficient. Less manual more automated.
7. Adaptable systems. Ready for the future.

...AND THIS IS WHAT IT WOULD LOOK LIKE

System that talk to each other

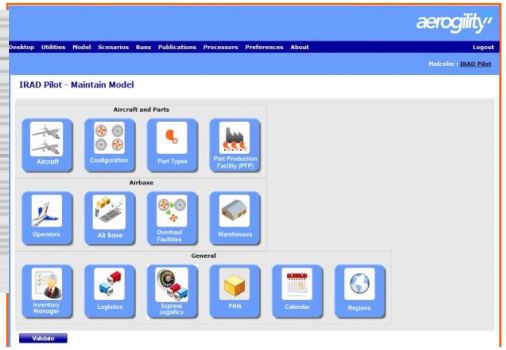


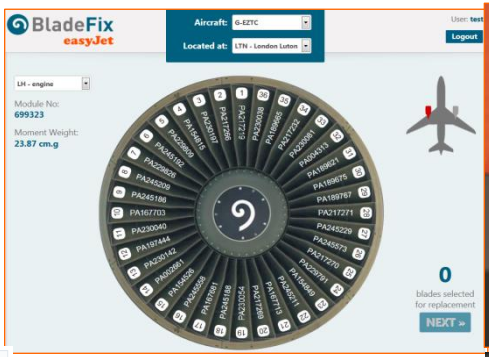
Transfer to a 100% paperless operation

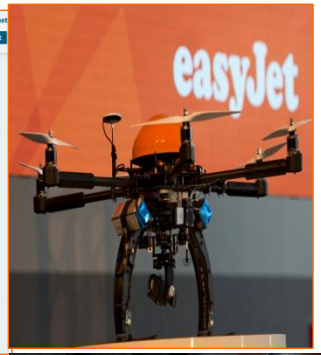
No more....

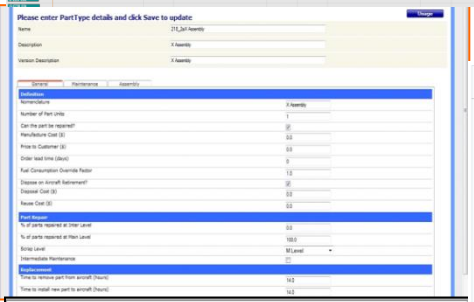
OUR INNOVATION JOURNEY CONTINUES.....

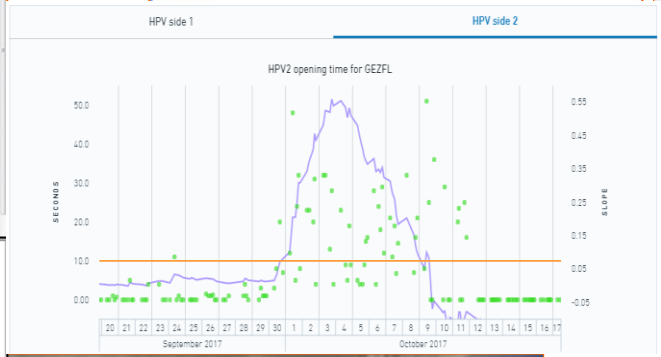
E-RECORDS
PAPERLESS OPERATION

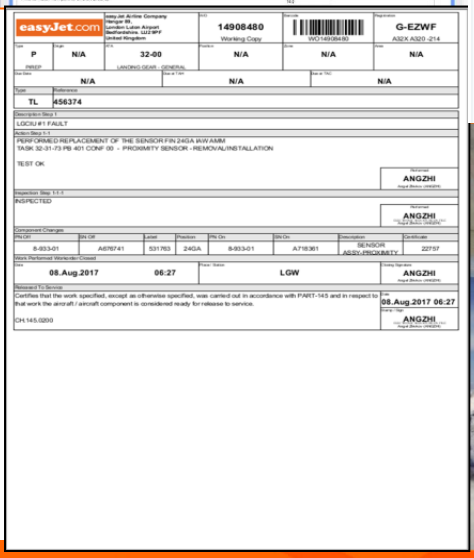


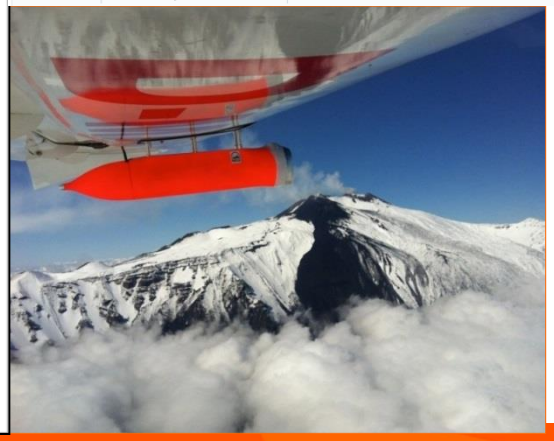


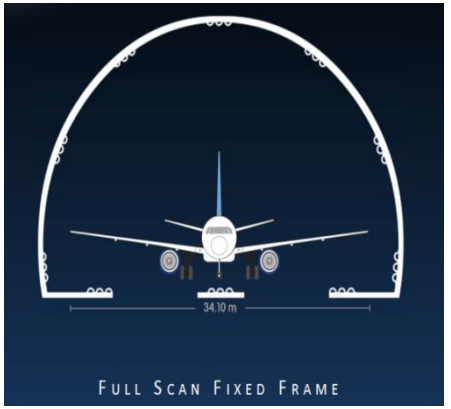












THANKS!

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